



XO Button™

The Implant of Choice for Extracortical, Soft Tissue Fixation in Cruciate Reconstructions.

- Pre-stretched continuous loop
- Simplified technique
- Integrated method to reposition the implant
- Inherent Rotational Moment (I.R.M.™) for effective seating on the femoral cortex
- Pre-loaded with passing sutures
- Limited reuse drill bit



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trademark of Royal DSM N.V.



CONMED™
LINVATEC

XO Button™

The XO Button is your implant of choice for extracortical, soft tissue fixation in cruciate reconstructions. Our continuous loop is tightly woven and pre-stretched to remove creep prior to implantation. Combined with a simplified surgical technique, the XO Button implant provides strength and security for all your ACL and PCL reconstructions.

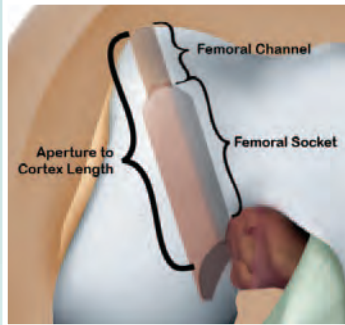
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The Inherent Rotational Moment (I.R.M.™) of the XO Button™ implant allows for effective seating on the femoral cortex. The unique design of the XO Button™ allows for an integrated technique for repositioning.

The following techniques are described
by Donald Johnson, M.D.

Surgical Terms



AC Length:

Aperture to Cortex Length

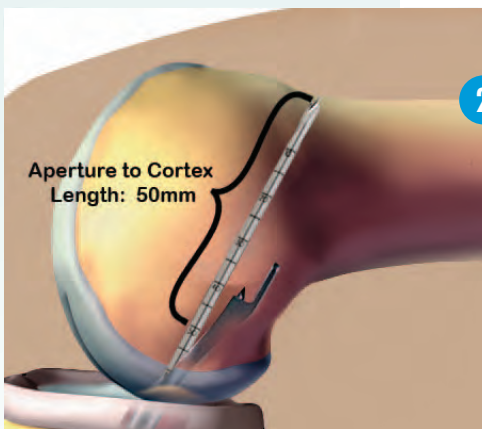
The measurement, in millimeters, of the distance from the aperture of the femoral socket to the distal femoral cortex.

Femoral Socket:

The bone tunnel into which the soft-tissue graft is suspended. The diameter of the socket corresponds to the diameter of the graft.

Femoral Channel:

5mm, in diameter, bone tunnel spanning from the top of the femoral socket to distal cortex. This is the channel that the XO Button™ will pass through.



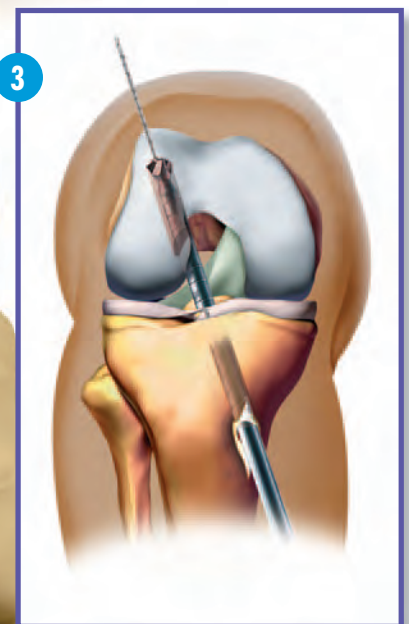
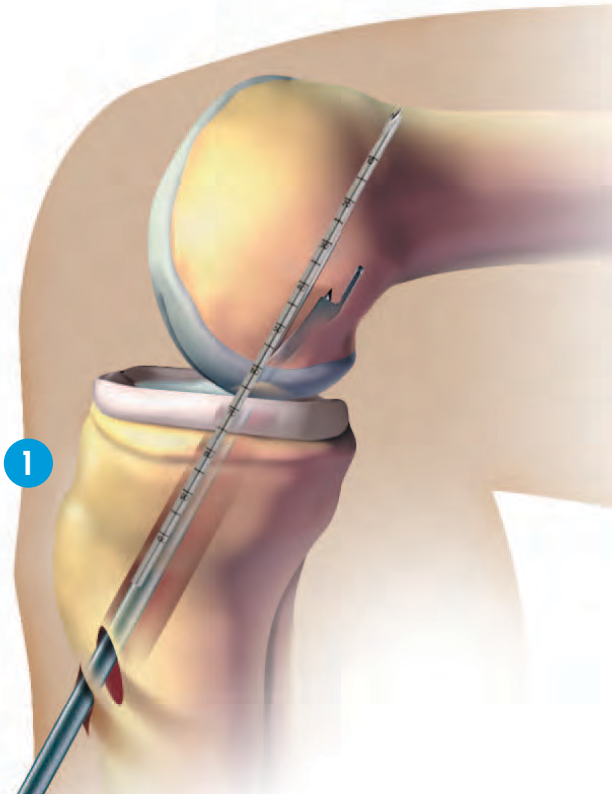
Femoral Socket:

Step 1: Select and position the correct Bullseye® Femoral Guide for a ten/two o'clock position on the femur. Insert the XO Button™ Graft Passing Guide Pin, C8676, through the handle of the Bullseye® Guide.

Step 2: With the knee flexed to 90°, slowly drill the XO Button™ Graft Passing Guide Pin, advancing until the pin reaches the distal femoral cortex (Figure 1). When the pin reaches the cortex, note the depth taken from reference marks on the proximal end of the pin. This measurement provides you with an estimate of the aperture to cortex length, AC length, (Figure 2). Once noted, advance the guide pin through the skin.

Step 3: Select a ConMed Linvatec Badger® Drill Bit of a size comparable to the graft diameter and create the femoral socket. Drill the femoral socket to an adequate 35mm.

NOTE: If the estimated AC length (step 2) is less than 40mm deep, reduce the femoral socket drilling depth accordingly. See chart A.



Surgical Pearl:

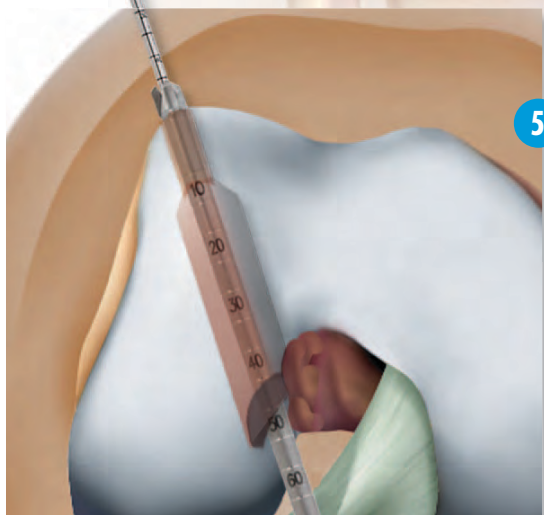
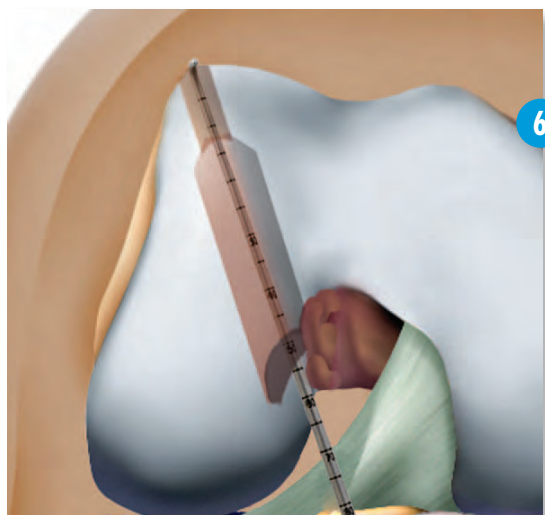
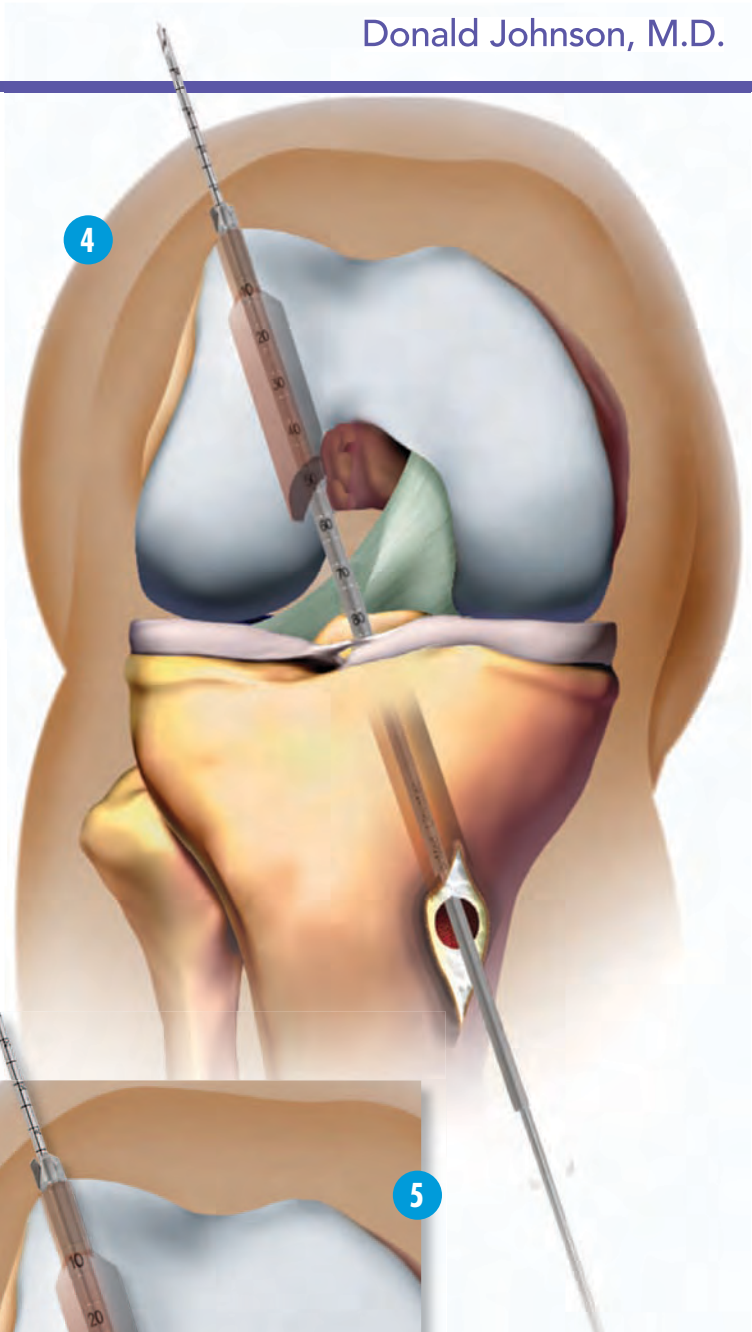
When drilling the guide pin use a piston like motion to gently palpate the cortex.

Femoral Channel:

Step 1: Without removing the XO Button™ Graft Passing Guide Pin, use the XO Button™ Drill Bit, C8590, to create a 5mm femoral channel. Over-drill the pin through the distal femoral cortex (Figure 4).

Step 2: To measure the aperture to cortex length, using the XO Button™ Drill Bit, rest the base of the drill bit on the exterior cortex of the femur and read the measurement at the aperture of the tunnel. This confirms the AC length (Figure 5). Alternatively, use the ConMed Linvatec Depth Probe, trans-tibially, to measure the AC length (Figure 6).

Alternative Technique:
 If difficulty is encountered palpating the distal femoral cortex with the guide pin, drill the 5mm femoral channel before the femoral socket. This will allow you to verify the AC length using the XO Button™ Drill Bit to prevent breaching of the cortex.

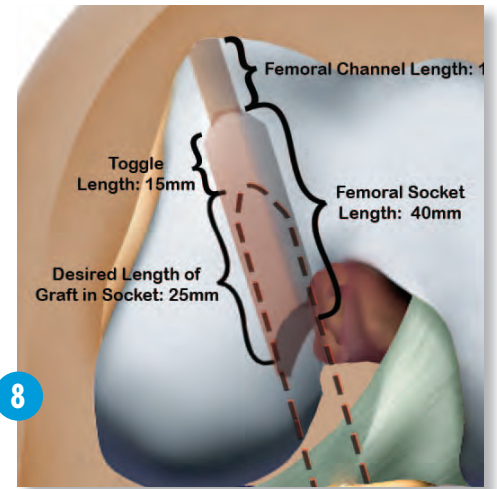
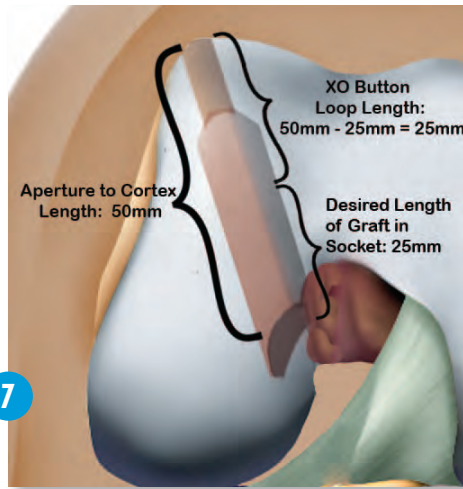


Surgical Pearl:
 10-15mm is required to flip the XO Button™ implant. 15mm is necessary only when you have a large graft bundle (9mm and up). This is because the larger graft spreads the bottom of the loop decreasing the actual length.

XO Button™ Sizing:

The appropriate XO Button™ loop length is chosen based upon the desired length of graft in the femoral socket. The loop length is the difference between the AC length and the desired length of graft in the socket (Figure 7).

To flip the XO Button™ implant it must be drawn 15mm past the femoral channel. This allows the implant to fully emerge from the bone tunnel and completely rotate (Figure 8). Because of this, the femoral socket depth must be 15mm greater than the length of graft in the socket. Always verify that:



$$\text{XO Button™ Loop Length} = \text{AC Length} - \text{Desired Graft in Socket}$$

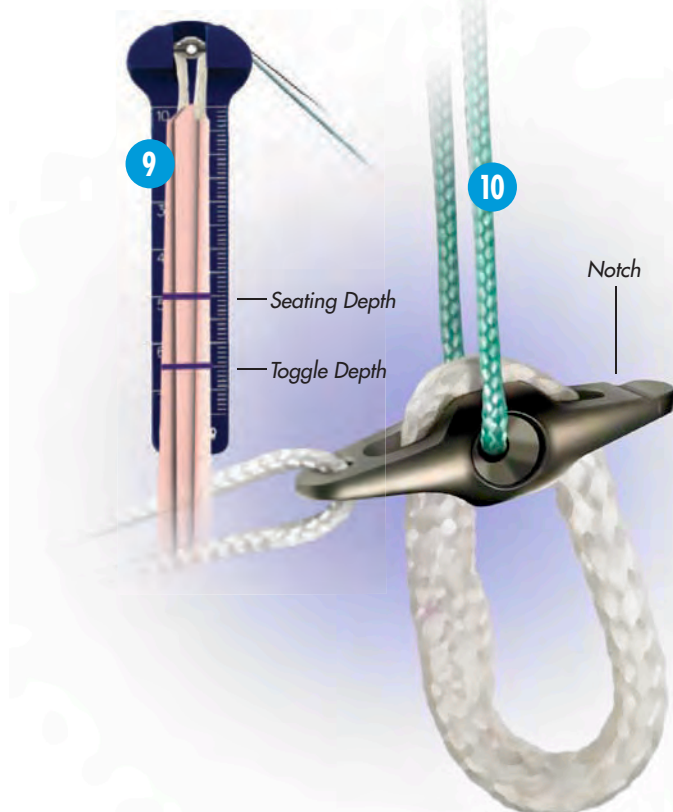
$$\text{Femoral Socket Length} \geq \text{Desired Graft in Socket} + 15\text{mm}$$

Surgical Pearl:

If you experience difficulty flipping the XO Button™ implant, lengthen the femoral socket using a drill bit or dilator.

Chart A:

Aperture to Cortex Length	Recommended Socket Length	Desired Length of Graft in Socket	AC Length - Desired Graft in Socket = XO Button™ Loop Length
30mm	25mm	15mm	30mm - 15mm = 15mm
35mm	30mm	20mm	35mm - 20mm = 15mm
40mm and Greater	35mm	20mm to 25mm	40mm - 20mm = 20mm



Graft Loading

Step 2: Load the graft onto the XO Button™ implant by threading it through the continuous loop. **The orientation of the implant relative to the graft should be such that the notch on the wing of the XO Button™ faces away from the graft bundle** (Figure 10). Using the Grafix prep-table, load the XO Button™ construct onto the XO Button™ Holder.

Step 3: Mark the graft using a surgical skin marker at the distance corresponding to the AC length. This is the seating depth. **Optional:** Apply a second line 10-15mm greater than the seating depth to note toggle depth (Figure 9).

Surgical Pearl:

For easiest flipping of the XO Button™ implant, pass the construct with the notch facing anterior.

Passing the Graft:

Step 1: Load the XO Button™ passing suture (**centrally located, green suture**) onto the XO Button™ graft passing pin eyelet.

Step 2: Using the graft-passing pin, pull the passing suture through the tibial and femoral tunnels until the suture can be retrieved percutaneously.

Step 3: Pass the graft construct through the tibial tunnel and into the femoral socket by pulling with the lead suture while holding tension on the guiding suture (**axially located, white suture**) (Figure 11).

Note:

Do not apply distal tension to graft bundles while advancing the XO Button™; this will cause the XO Button™ to flip prematurely.

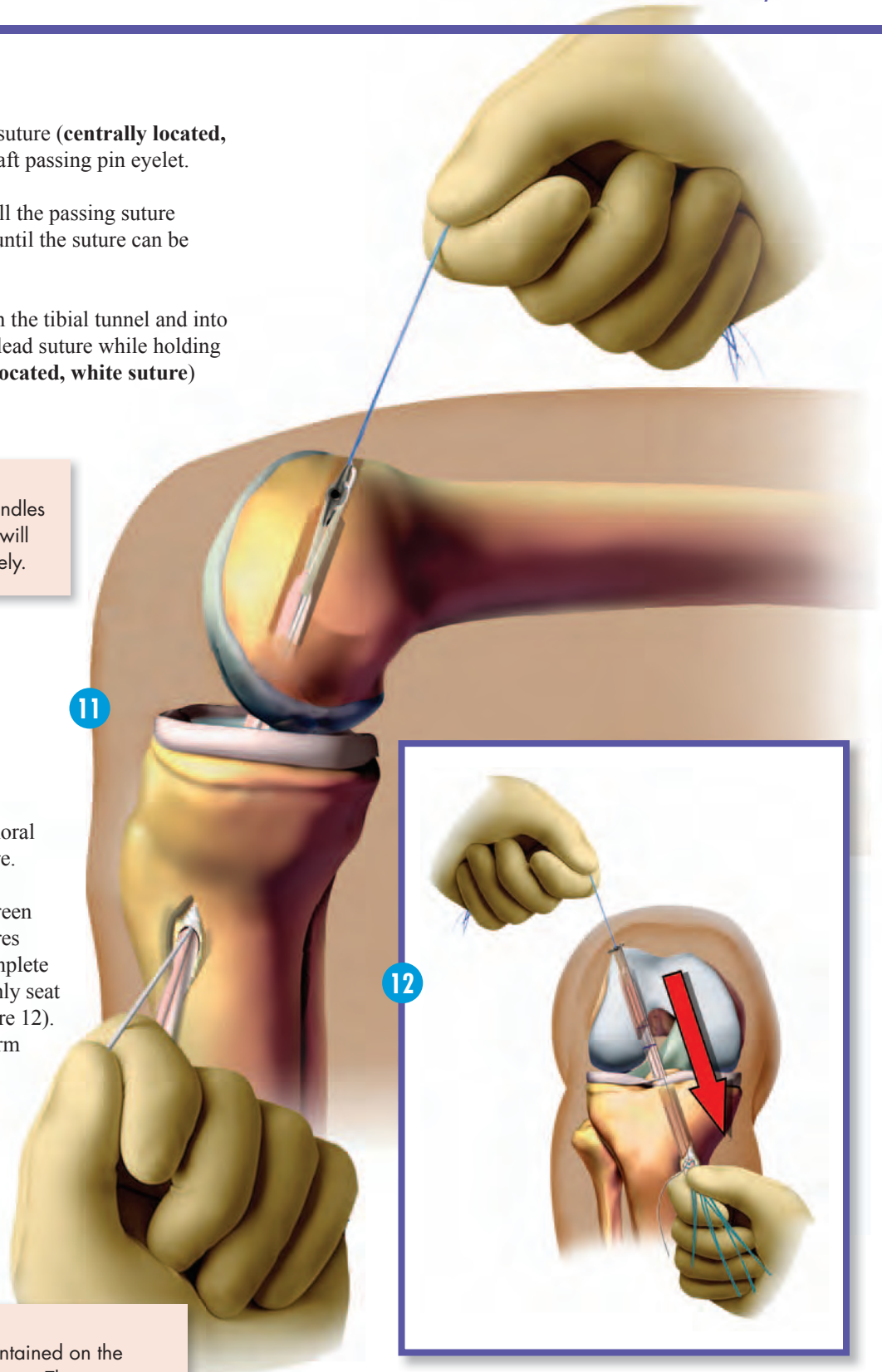
XO Button™ Fixation:

Step 4: Bottom the graft out in the femoral socket. Release the white guiding suture.

Step 5: While holding tension on the green passing suture, pull distally on the sutures whipstitched to the graft bundles to complete the rotation of the XO Button™ and firmly seat the implant on the femoral cortex (Figure 12). Visualize the mark on the graft to confirm proper seating.

Note:

It is essential that distal traction is maintained on the guiding suture while passing the construct. This tension maintains the orientation of the XO Button in the tunnels and prevents the button from rotating prior to exiting the femoral channel.

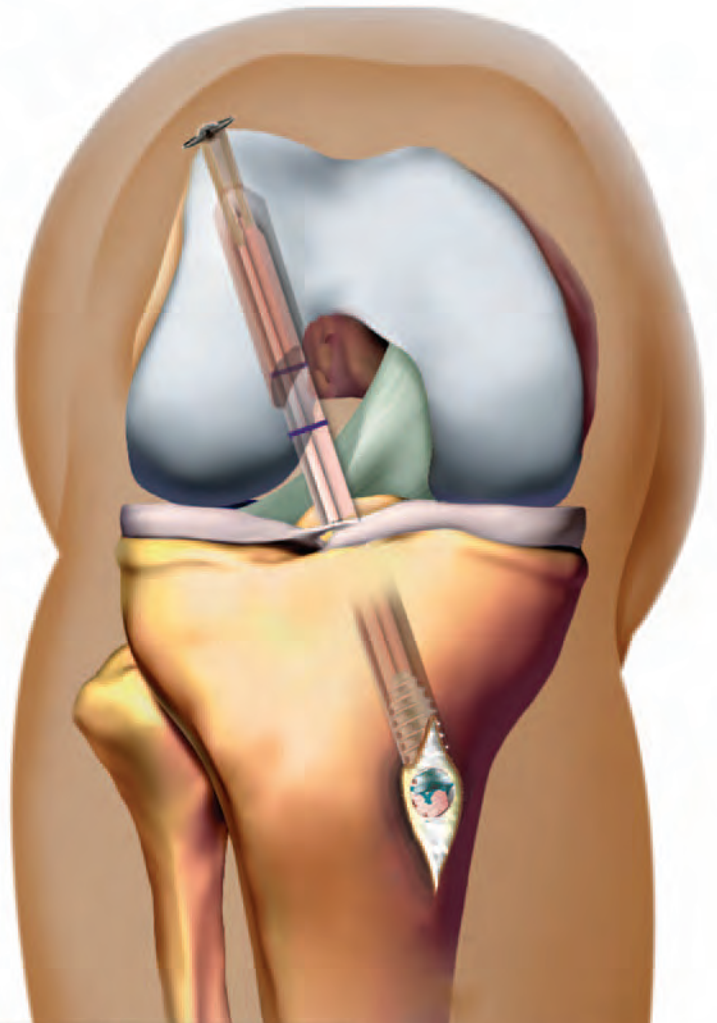
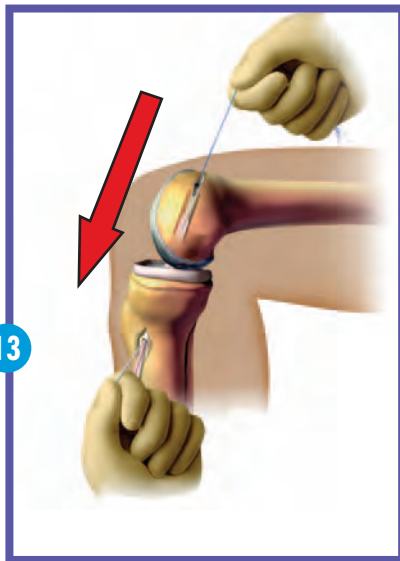


Removal of the XO Button™:

If at any point during the procedure the construct needs to be repositioned after the XO Button™ implant has been seated, pull upward on the leading suture and downward on the guiding suture. This will straighten the XO Button™ and allow it to re-enter the femoral channel (Figure 13).

Removal of Sutures:

Once the XO Button is seated in a satisfactory orientation the two sutures should be removed. **To remove the guiding suture pull on one end while maintaining tension on the graft bundle.** Tension on the graft bundle is essential to ensure that the XO Button does not reenter the femoral channel. To remove the leading suture, pull on one end.



Surgical Pearl:

If removing the construct from the femoral tunnel, you must pull retrograde on the graft bundle and guiding suture.

Key Factors for successful implantation:

The XO Button Notch must face anterior relative to the graft construct

XO Button™ Loop Length = AC Length - Desired Graft in Socket

Apply tension to the graft bundle sutures only when

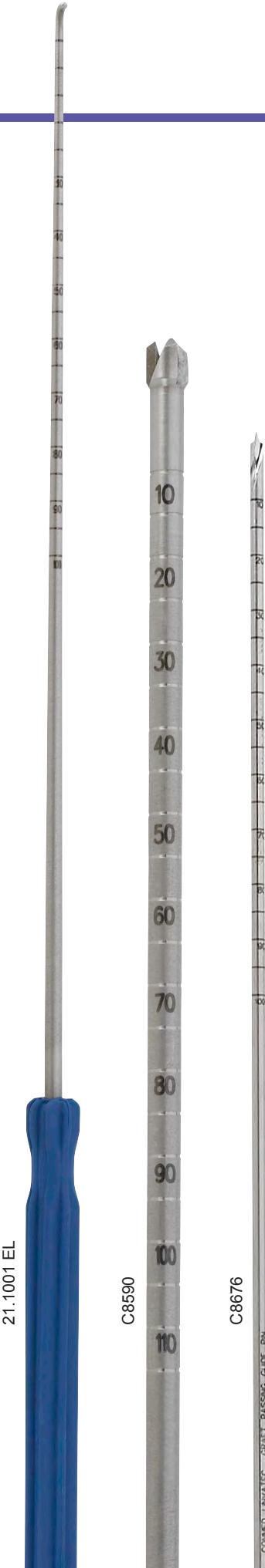
- Seating the implant (high tension)
- Backing out the implant (mild-moderate tension)

Ordering Information

<u>Catalog No.</u>	<u>Implant Product Description</u>
T5015	XO Button™ w/15mm Continuous Loop
T5020	XO Button™ w/20mm Continuous Loop
T5025	XO Button™ w/25mm Continuous Loop
T5030	XO Button™ w/30mm Continuous Loop
T5035	XO Button™ w/35mm Continuous Loop
T5040	XO Button™ w/40mm Continuous Loop
T5045	XO Button™ w/45mm Continuous Loop
T5050	XO Button™ w/50mm Continuous Loop
T5055	XO Button™ w/55mm Continuous Loop
T5060	XO Button™ w/60mm Continuous Loop

<u>Instrumentation</u>	
C8590	XO Button™ Drill Bit
PS8834	XO Button™ Holder
C8676	XO Button™ Graft Passing Guide Pin
21.1001 EL	Depth Probe

<u>Information & Marketing Materials</u>	
CST 1025	XO Button™ Technique Guide





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